



US009005417B1

(12) **United States Patent**
Sommer et al.

(10) **Patent No.:** US 9,005,417 B1
(45) **Date of Patent:** Apr. 14, 2015

(54) **DEVICES, SYSTEMS, AND METHODS FOR MICROSCALE ISOELECTRIC FRACTIONATION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1178 days.

(21) Appl. No.: 12/243,817

(22) Filed: Oct. 1, 2008

(51) **Int. Cl.**
G01N 27/447 (2006.01)

(52) **U.S. Cl.**
CPC **G01N 27/44795** (2013.01); **G01N 27/4473** (2013.01); **G01N 27/44791** (2013.01)
USPC **204/450**

(58) **Field of Classification Search**

CPC G01N 27/4473; G01N 27/44791;
G01N 27/44795
USPC 204/644, 548, 600, 450; 422/99, 100,
422/72, 63, 64, 681; 435/283.1, 287.2,
435/288.5, 6; 427/430

See application file for complete search history.

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(57) **ABSTRACT**

Embodiments of the present invention provide devices, systems, and methods for microscale isoelectric fractionation. Analytes in a sample may be isolated according to their isoelectric point within a fractionation microchannel. A microfluidic device according to an embodiment of the invention includes a substrate at least partially defining a fractionation microchannel. The fractionation microchannel has at least one cross-sectional dimension equal to or less than 1 mm. A plurality of membranes of different pHs are disposed in the microchannel. Analytes having an isoelectric point between the pH of the membranes may be collected in a region of the fractionation channel between the first and second membranes through isoelectric fractionation.

24 Claims, 5 Drawing Sheets

